

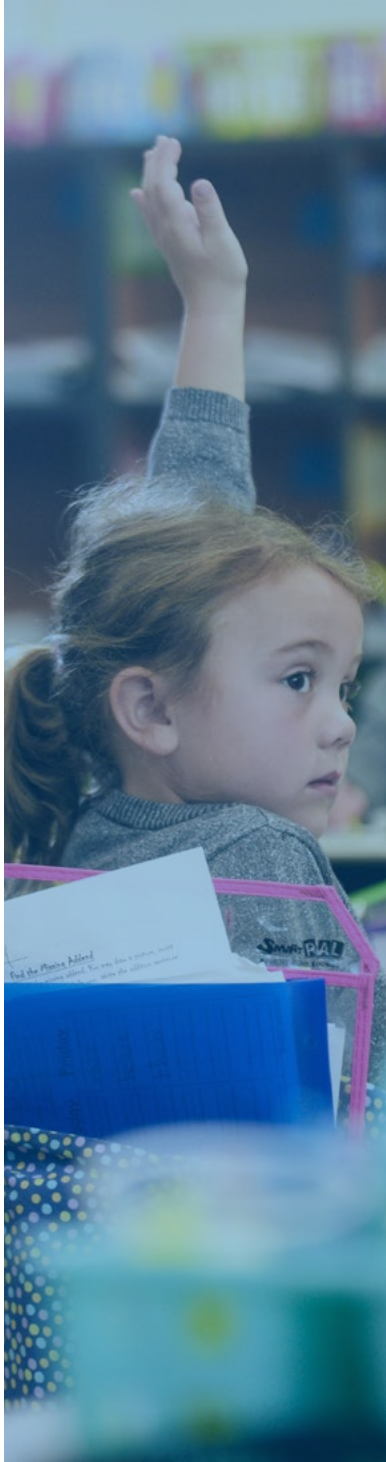
# THE SCIENCE OF READING

WINTER 2020

If We Know Better,  
We Must Do Better.

Applying the Science of  
Reading in Tennessee

**SCORE**  
State Collaborative on Reforming Education



## There is a clear science to teaching reading.

There is a clear science to teaching reading. Due to advancements in cognitive science we know more about how kids learn to read than ever before. The science of reading dispels misconceptions and myths about reading instruction that have held students back for decades.

We have a responsibility to use the science of reading to inform policy that fosters classroom practices aligned to the science of reading. Only then will students experience reading instruction that prepares them for citizenship beyond K-12.

This resource lays out problematic misconceptions about reading instruction and shares critical research headlines we should use to inform decisions. It offers suggestions to carve a path forward that leads to the end of the reading crisis in Tennessee.

**“RESEARCH IS THE ONLY TOOL WE HAVE THAT ALLOWS US TO DETERMINE THE KINDS OF TEACHING MOST LIKELY TO ADVANCE OUR STUDENTS’ LEARNING; COMMONSENSE AND PAST EXPERIENCE ARE USELESS BEFORE SUCH QUESTIONS.”**

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**TIMOTHY SHANAHAN**

## Literacy rates in the US have been relatively flat for decades.

According to the National Assessment of Educational Progress (NAEP), our country's most representative and longest-standing assessment of what US students know and can do in core subject areas, fourth- and eighth-grade students have shown only modest increases in reading achievement since 1992.

- 35 percent of fourth-graders nation-wide performed at or above proficiency in reading in 2019 compared to 29 percent in 1992.
- Eighth-graders have shown slower growth in achievement (proficient or above), improving from 29 percent in 1992 to 34 percent in 2019.
- In 2019, the average reading scores for both fourth-graders and eighth-graders were lower compared to the 2017 assessment (2 percent and 3 percent lower, respectively).
- Twelfth grade reading proficiency is on a decline, nationally. In 1992, 40 percent of high school seniors were proficient or above in reading, compared to 37 percent in 2015. (NAEP did not test twelfth-graders in 2017 or 2019.)

The 2019 NAEP results highlight the stark disparities in reading achievement for many student subgroups.

- In fourth and eighth grades, Black, Hispanic, American Indian/Native Alaskan, and Native Hawaiian/Other Pacific Islander reading achievement is hovering at the Basic level. None of the groups had an average reading score in the Proficient range.
- The same low performance trends hold true for students who qualify for free/reduced lunch, have disabilities, or are English Language Learners.

## Literacy rates in Tennessee are no better than the national average.

- In 2019, 35 percent of fourth-graders and 33 percent of eighth-graders performed at or above proficient on the NAEP reading assessment.
- Tennessee student achievement data show that an average of 32.8 percent of students across grade levels are meeting grade level expectations in English Language Arts. (TN DOE, 2018)
- Only 13 districts state-wide have ACT results that meet the college-ready benchmarks for both English and Reading (The ACT college-ready benchmarks for English and Reading are 18 and 22, respectively.)

We have a reading crisis in Tennessee.

The human brain is not naturally wired to read. Reading is a complex set of skills that must be explicitly taught.

A widely-held misconception is that learning to read is a natural process – much like learning to speak- and that kids will naturally pick up the skills if given enough time and access to text at their “just right” reading level. This is not true.



THE IDEA THAT  
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ACCEPTED BY NO  
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LINGUIST,  
PSYCHOLOGIST,  
OR COGNITIVE  
SCIENTIST IN  
THE RESEARCH  
COMMUNITY.”

KEITH STANOVICH

### **We are all born with the ability to process oral language.**

Humans are born with areas of the brain that are dedicated to oral language development. We are born to speak and use speech to connect with others and make sense of the world around us.

### **We are also all born with the ability to process visual images.**

We have a visual system in our brains that helps us make sense of the things we see, including written words.

### **But we are NOT born with connections between those parts of the brain.**

Reading instruction must build the bridge between the oral language and visual image processing. We must train our brains to translate the shapes we see on a page (words) into meaningful information. We make meaning by connecting the visual information to the knowledge and vocabulary we have built through oral language and life experiences.



## Reading requires a complex set of mental processes.

Effective reading instruction requires teaching of two types of competencies: foundational reading skills and knowledge-based competencies. Skilled readers have both solid foundational reading skills that allow them to translate written words to spoken language and the ability to make meaning from what they read.

**Foundational Reading Skills**—often referred to collectively as decoding—help early readers understand how letters, sounds, and words work. Foundational reading skills are finite and can be fully mastered. They include things like:

- **Concepts of print:** Readers learn how to approach a text and can read left to right and top to bottom on a page.
- **Phonemic awareness:** Students learn to hear, identify, and manipulate individual sounds (phonemes) in words. For example, a kindergartener can identify the three sounds in the word cat: /k/ /a/ /t/. She can also identify how the word changes if the /k/ sound is replaced with /m/.
- **Phonological awareness:** Students learn to hear, identify, and manipulate units of oral language, including words, syllables, and other word parts. For example, a second grader can clap twice to show he can accurately identify the number of syllables he hears in the word “sister”: sis-ter. He can tap three times to count the syllables in “artichoke”: ar-ti-choke.
- **Phonics:** Readers learn the predictable relationships between sounds (phonemes) and the letters and spellings that represent those sounds in written language. With phonics, students have a system for remembering how to read and write words. For example, once a child learns that bone is spelled b-o-n-e rather than b-o-a-n, her memory will help her read and spell the word instantly and more accurately in the future.
- **Spelling:** Students use their knowledge of phonics to accurately write the letters to represent the sounds they hear in words.
- **Fluency:** Readers learn to read text accurately, quickly, and with appropriate expression to show they understand emphasis and tone. Fluency is the link between decoding and comprehension.

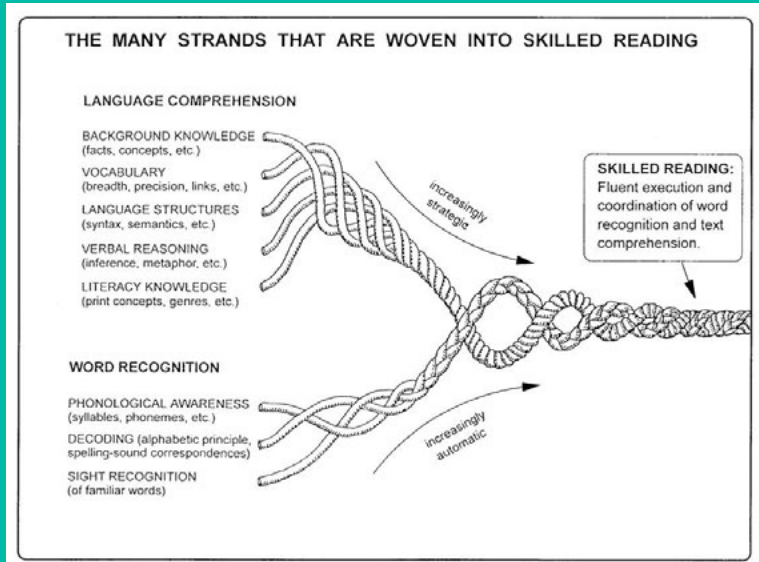
**Knowledge-based competencies** are rooted in overall language comprehension and help students create meaning from text. They are dynamic and are developed over a reader’s lifetime, starting at birth. Knowledge-based competencies include things like:

- **Vocabulary:** Readers have vast knowledge of words and their meanings.
- **Background knowledge:** Readers accumulate knowledge of the world, facts, and skills to build their background knowledge. They use this background knowledge to make sense of the information they come across through reading.
- **Oral language skills:** Students develop command over word form, sentence structure, and discourse. They can make meaning from spoken language using their background knowledge, vocabulary, and understanding of how language is structured.
- **Reading comprehension skills:** Readers learn to unlock the meaning of text because they can decode the words on the page and simultaneously understand the meaning of those words.

Since 1986, reading experts have used these two categories of competencies to clarify the relationships between decoding and language comprehension in reading, and elevate the critical role skills-based competencies have in reading ability, particularly for early readers.

Both decoding skills and language comprehension abilities are critical, and both must be strong for proficient reading comprehension. Strength in one area cannot compensate for a deficit in the other area, particularly for young readers. In other words, a young reader with excellent decoding skills will not understand a text if she does not also have knowledge of the topic. The opposite is also true. A beginning reader with a great deal of knowledge of the topic will struggle to understand the text if he cannot read the words on the page.

Skills competencies must be automatic; knowledge competencies must be applied strategically, as the reading rope model emphasizes. Tennessee schools must give attention to both sets of competencies to develop skilled readers.



Reading Rope image courtesy of the author, Hollis Scarborough.

## Foundational reading skills must be taught explicitly and systematically.

Some educators have the misconception that teaching phonemic awareness is neither necessary nor beneficial to learning to read. Others have the misguided notion that phonics is beneficial only for struggling readers or students with dyslexia.

The National Reading Panel evaluated existing research and evidence to find the best ways of teaching children to read. The Panel considered roughly 100,000 reading studies published since 1966, and another 10,000 published before that time. The National Reading Panel's analysis made it clear that the best approach to early reading instruction is one that incorporates:

- Explicit instruction in phonemic awareness
- Systematic phonics instruction
- Methods to improve fluency

### Phonemic awareness is essential to reading.

Regarding phonemic awareness, the National Reading Panel confirmed that:

- **Phonemic awareness can be taught.** Children learn to hear, think about, and work with the sounds they hear in words.
- **Phonemic awareness is required for reading.** It enables children to read words rapidly and accurately, freeing up brain space for comprehension.
- **Phonemic awareness helps children learn to spell.** Students learn to connect sounds to letters in predictable patterns.

**Explicit:** pre-determined skills are taught directly

**Systematic:** skills are taught in a logical progression

The 14-member National Reading Panel included school leaders, teachers, and reading researchers.

Donald N. Langenberg, Ph.D.  
(chair)

Gloria Correro, Ed.D.

Linnea Ehri, Ph.D.

Gwenette Ferguson, M.Ed.

Norma Garza, C.P.A.

Michael L. Kamil, Ph.D.

Cora Bagley Marrett, Ph.D.

S.J. Samuels, Ed.D.

Timothy Shanahan, Ph.D.

Sally E. Shaywitz, M.D.

Thomas Trabasso, Ph.D.

Joanna Williams, Ph.D.

Dale Willows, Ph.D.

Joanne Yatvin, Ph.D.

## Case closed: Phonics instruction matters—a lot.

When it comes to phonics instruction, the report of the National Reading Panel closed the case on any lingering questions about the benefits of phonics instruction. First, the research confirms what may seem obvious: for students to understand what they read, they must first read the words on the page. The research also clearly found that:

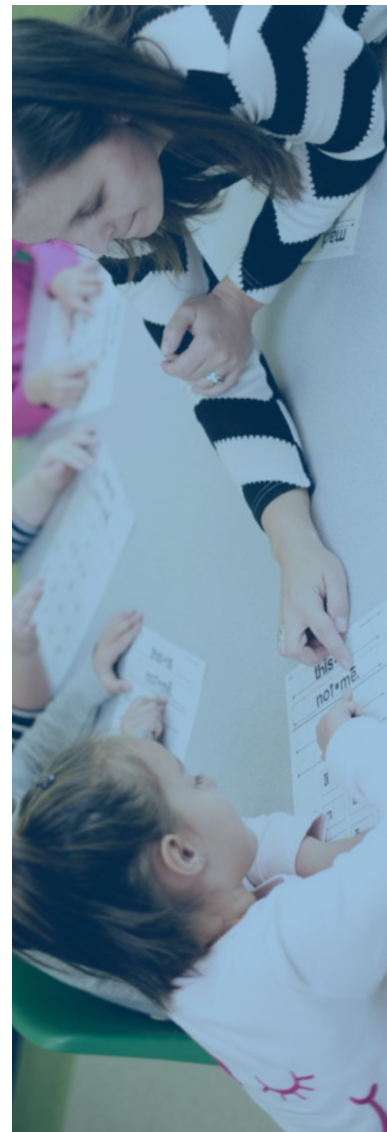
- **Students who receive explicit phonics instruction become better readers than students who do not receive phonics instruction, or who receive spotty phonics instruction.** The most effective phonics instruction is systemic; it teaches a clearly defined sequence of the major sound-spelling relationships of consonants and vowels. Effective phonics instruction is also explicit; the teacher provides precise and direct instruction.
- **Systematic phonics instruction has the greatest benefits when it begins in kindergarten or first grade.**
- **Systematic phonics instruction improves reading comprehension,** as the ability to read words accurately and quickly is correlated to reading comprehension.
- **All students, regardless of their backgrounds, make greater gains in their reading when they receive systematic phonics instruction.** Even students who learn phonics quickly and easily gain vocabulary, increase their reading fluency and build critical thinking skills when they receive systematic phonics instruction.

The abundance of research examined by the National Reading Panel is bolstered by the findings of the National Assessment of Educational Progress (NELP). NELP confirms that alphabet knowledge, oral language, and phonological awareness provide the basis for reading success.

## “But I didn’t have phonics instruction, and I can read just fine!”

If this thought crossed your mind, you are likely a rare exception to the rule.

- A very small minority of students—only 5 percent—learn to read effortlessly and with minimal phonics-based instruction.
- Another 35 percent of students learn to read easily and at a rapid pace with explicit, systematic phonics-based reading instruction.
- 40-50 percent of students require support through explicit and systematic phonics-based instruction. This group represents the average learner who can meet grade-level expectations when provided effective reading instruction.
- 10-15 percent of the population have symptoms of dyslexia and require explicit and systematic phonics-based instruction, with intensive intervention and many repetitions.





Some worry that phonics instruction may harm the reading progress of students who can learn to read without it.

The opposite is true: Phonics instruction benefits all students regardless of their skill level. Providing systematic, Tier 1 phonics instruction to all students produces overall strong readers, ensuring that students are not left with gaps in their letter-sound knowledge. Phonics not only supports decoding and fluency skills; it also boosts reading comprehension, because reading words accurately and automatically allows readers to focus on the meaning of text. Phonics instruction can be differentiated for student needs and is best done in flexible groups to match students' needs and the pace of learning.

### **Fluency is the bridge between decoding and comprehension.**

Fluent readers read with accuracy, automaticity, and expression. They immediately recognize words and can cluster words into meaningful phrases. Fluent readers decode without much effort, allowing them to dedicate energy to making meaning from what they read.

### What does explicit, systematic foundational skills instruction look like for students?

- Students learn grade-level skills in the foundational skills portion of their literacy block. Lessons match grade-level standards and are from a systematic scope and sequence, which is outlined in a research-based, high-quality curriculum that builds skills coherently from grade-level to grade-level.
- Students have fun while they learn. Instruction is engaging, child-friendly and age-appropriate.
- Students learn the correct way to pronounce sounds and words. The teacher's instruction is accurate and clear.
- Students practice hearing, saying, reading, and writing their new skills. Lessons provide ample time to practice decoding skills.
- Quick learners can go fast and those who need more time get more practice. The teacher has data on students' learning progress and differentiates lessons.

More details from [Achieve the Core \(PDF\)](#).

Foundational reading skills can't stand alone. Students also need background knowledge and vocabulary to be skilled readers.

Some falsely believe that children must first learn to read before they can read to learn. Others assume that building knowledge is not developmentally appropriate for our youngest learners or that young students or students who are far behind are not capable of learning complex content or ideas.

### **Of course, children must learn to read.**

We know from the vast body of research that children must learn to read, that is, they must learn to crack the code of English to be able to translate written words into spoken language. Teaching children to read means teaching foundational reading skills: phonemic awareness, phonics, and fluency.

While foundational reading skills are best taught in kindergarten and first grade, we cannot wait until children are reading independently to also teach knowledge. We must teach decoding skills and build knowledge and vocabulary, and we must start in the earliest grades. Even our youngest learners can build knowledge about the world, even if they aren't yet reading independently.

### **Learners of all ages are ready to build knowledge and be exposed to complex ideas.**

Child development is continuous and fluid; it does not happen in discrete stages as we once believed. This important discovery shows us there is no single point in time that marks readiness to learn and be exposed to new ideas.

Building background knowledge is developmentally appropriate. As early as the 1960's, cognitive scientists have shown that exposing young students to complex ideas gives learners appreciation and early understandings of those ideas. Children's understanding might be incomplete at first, but over time and with more experience, they will deepen and formalize their learning.





**“TEACHERS CAN READ ALOUD TO BUILD STUDENTS’ KNOWLEDGE OF THE WORLD BEYOND THEIR SCOPE AND TO HELP STUDENTS MAKE CONNECTIONS FROM THE KNOWN TO THE NEW. THERE IS LIKELY NO BETTER WAY TO DRAW CHILDREN IN TO THE TREASURES STORED IN THE WRITTEN WORD THAN THROUGH READING ALOUD TO THEM AS MUCH AS POSSIBLE.”**

**DAVID LIBEN**

This does not mean our youngest learners should be expected to build knowledge solely by reading on their own. Consider the benefits of reading aloud to babies and toddlers:

- Teaches language structure
- Introduces new concepts and information
- Builds listening skills and language comprehension
- Teaches vocabulary

These same benefits carry into a child’s school years. In the early grades, teachers should read aloud content-rich texts that are two-three grade levels above their current grade to help students grow their knowledge, vocabulary, and oral language skills. Research shows that from birth to about age 13, children’s oral language abilities exceed their reading comprehension abilities, meaning children learn more from listening to texts than they do when reading on their own. Read alouds are essential in the early grades to develop students’ listening comprehension, build their knowledge of the world, and boost their academic vocabulary.

The same best practices for building knowledge for young learners hold true for readers who may be far behind. Struggling learners benefit from building their background knowledge and vocabulary, and from growing their language comprehension skills. Knowledge and vocabulary level the playing field for students who come to school with language and experience gaps.

## Teaching knowledge and vocabulary improves reading comprehension.

Exposing students to new vocabulary, concepts, and background knowledge grows students' language comprehension, which improves both decoding and reading comprehension. For students to develop deep content knowledge and expertise that sticks, vocabulary and knowledge must be taught intentionally and systematically by spending extended classroom time reading, listening to, and discussing multiple texts on the same topic. The texts must offer a rich diet of facts, ideas, and vocabulary words, and not be "trivial literature" or reading selections on fragmented topics.

Vocabulary can make or break a reader's success with a text: the more words a reader knows, the better her comprehension is. Readers become frustrated and struggle to comprehend when just two percent of the vocabulary is unfamiliar.

Having a solid base of knowledge of a topic helps readers take in new information as they read, solidifying and improving comprehension. Knowledge helps a reader fill in any blanks left by authors and aids in making inferences. Knowledge also helps readers think about and internalize new information. As we read new information on a given topic, readers with existing background knowledge can more easily connect the new information with existing knowledge.



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CONTRIBUTE TO  
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AND THE USE  
OF STRATEGIES  
TO PREPARE TO  
READ AND FIX UP  
MEANING WHEN IT  
BREAKS DOWN—BUT  
IN STUDIES THAT  
HAVE EXAMINED  
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KNOWLEDGE IS THE  
MOST IMPORTANT  
CONTRIBUTOR.”**

**CERVETTI & HIEBERT**

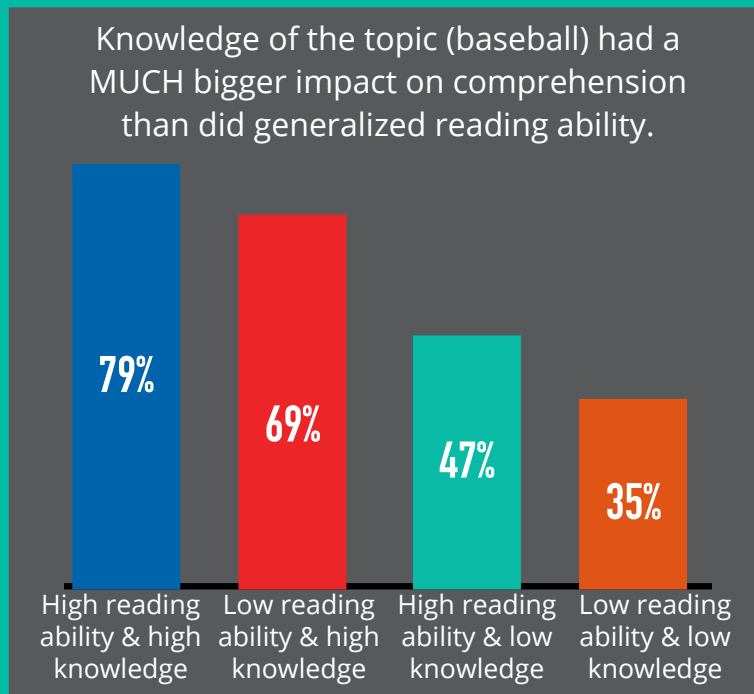
The connections between content knowledge and comprehension are significant. In the famous “Baseball Study,” researchers compared the relative impact of reading ability to the impact of knowledge of a topic. In the study, middle school students were grouped according to reading ability and their knowledge of baseball. Students read a passage about baseball and were then tested on their comprehension.

The students with low reading ability, but high knowledge of baseball outperformed the students with high reading ability, but low knowledge of baseball. Additionally, the researchers found that there was little difference between the two high knowledge groups and the two low knowledge groups. The study showed that prior knowledge of a topic has a greater impact on reading comprehension than general reading ability.

## Teaching knowledge is a matter of equity.

Reading researchers have demonstrated that background knowledge equalizes the differences in the effects of socio-economic status on language and reading comprehension. When we explicitly teach all students the same rich and meaningful content, students can comprehend regardless of their backgrounds and experiences outside of school.

## The Baseball Study



## The WUG Test

Low socioeconomic (SES) and Middle/High SES preschool students listened to read alouds about four different species of birds in a book series. Then researchers tested reading comprehension.

Middle/High SES students outperformed low SES students when the topic was birds, likely because the higher SES students had more background knowledge about birds.

Next, researchers read a series of books on four species of made up creatures called WUGS, a topic about which none of the students had prior knowledge.

When tested for reading comprehension on WUGS, students in both groups showed the same level of comprehension.

The Takeaway: If we level the playing field when it comes to knowledge, we can close the gaps we see in comprehension.



# Take action: Help students build their skills-based competencies and their knowledge-based competencies

## Start in kindergarten.

Literacy blocks must give time and attention to both sets of competencies—those that build decoding skills and those that build knowledge—in grades K-2. Primary grades must systematically and explicitly teach students the decoding skills required to crack the code of the English language. Early readers need exposure to important background knowledge that they will continue to build upon in later grades and throughout life.

## Ensure students read and are read to—a lot.

Students will develop as skilled readers only when given the chance to grow their reading muscles.

Reading makes a person smarter; it builds “crystallized intelligence” (knowledge, facts, skills) and must be practiced regularly and frequently. The more one reads and is read to, the smarter one becomes. This is referred to as the Matthew Effect in reading. A high volume of reading increases children’s decoding ability, word knowledge, vocabulary, and comprehension. Additionally, as children become more skilled readers, they enjoy reading more and are more motivated to read, which in turn continues to hone their skills. The “rich” readers get “richer.”

Unfortunately, the opposite is also true. Struggling readers tend to get less access to texts, particularly texts that are interesting and engaging, are less motivated to read, and have fewer opportunities to strengthen their reading skills. The “poor” readers get “poorer.”

## Provide the right kind and right amount of reading strategy instruction.

### It is a popular but misinformed belief that reading is a set of strategies that can be taught in isolation and then applied to any text.

You may recognize how this common misconception plays out in the classroom: a group of students meets with their teacher to learn a reading strategy, such as “compare and contrast.” Students practice “compare and contrast” while they independently read books at their desks. They spend weeks on a “compare and contrast” unit employing that strategy with different texts.

This type of strategy-based reading instruction does not benefit students. Rather, we can look to science to better inform reading strategy instruction:

- Reading strategy instruction is best taught after students are solid in their decoding skills, starting around third or fourth grade.
- Reading strategies are learned easily and do not require extensive teaching and practice.
- The handful of strategies that have the most positive impact on comprehension are those that unlock the meaning of the text at hand, such as making connections to prior knowledge, asking questions of the text, summarizing as one reads, and monitoring one’s own comprehension.
- A teacher’s time is best spent teaching vocabulary and knowledge.

## Use writing instruction as a tool to increase equity and boost reading comprehension.

### We must move away from the misinformed practice of teaching writing separately from reading.

Anchoring writing tasks and questions on the text at hand evens the playing field for students who may have limited personal experiences to draw on. For example, reading about airplanes and then asking students to write about a time when they traveled in an airplane excludes any child who has not had this experience.

The Tennessee Academic Standards are designed to create equitable learning experiences for all students. The standards require that students have rich experiences within the text: building knowledge through reading, using evidence in their writing that can only be found in the text, and learning academic vocabulary found in those very texts. By grounding discussion and writing tasks in the text itself, all students are given equal opportunities to learn and engage. Reading and writing become a shared experience in learning about any topic.

Approaching writing instruction in this way also boosts reading comprehension. Cognitive science shows that we understand and remember the things we pay attention to and think about deeply. When students write about what they have learned from texts, using specific information and vocabulary, they better understand and retain the new content.

## Eliminate practices that are ineffective and inequitable.

There are numerous programs and approaches that are still used widely but are not based on the science of reading. There is strong evidence to show these approaches do not work.

**Whole language** is a philosophy that assumes that learning to read is a natural phenomenon and that if children are exposed to enough texts, they will develop a love of reading and the skills needed to be fully literate. Whole language is often characterized by lessons that encourage children to use context clues rather than decoding skills as the primary method of word recognition. For example, if a line of text is “The Palomino was scarred,” a reader in a whole language classroom may be encouraged to look at the pictures or use context clues to guess at the words, inaccurately making “The pony was scared” an acceptable response. Whole language places emphasis on experiencing literacy over explicitly building knowledge through rich text and systematic phonics instruction.

**Balanced literacy** is deeply rooted in whole language and claims to add phonics instruction. Most often though, phonics instruction fails to be added. If it is included, it is rarely explicit or systematic. Balanced literacy is not balanced because it does not give adequate time and attention to teaching the skills-based competencies of reading that we know are essential to becoming a skilled reader.

**“IT’S TIME THAT WE RETIRE  
‘BALANCED LITERACY,’  
FOCUSING LESS ON  
IDEOLOGICAL AND RHETORICAL  
GAMESMANSHIP AND MORE  
ON WHAT HAS BEEN FOUND  
TO ACTUALLY HELP KIDS TO  
BECOME BETTER READERS.”**

**TIMOTHY SHANAHAN**

**Readers' Workshop:** A workshop approach has strong associations with whole language and balanced literacy. A workshop typically includes a teacher-led mini lesson that introduces an isolated strategy (such as 'finding the main idea'); time for students to independently practice the strategy in leveled text (meaning one the student can read independently); conference time with the teacher; some element of whole group student sharing to give closure. The workshop approach is problematic for two key reasons: first, students spend the bulk of their time reading texts that they can already read independently, eliminating opportunities to learn to navigate more complex texts and ideas. Second, students receive very little support for making sense of text outside of one-on-one conferences with the teacher (on texts students don't actually need support on to begin with).

**Guided reading** is commonly used as time for teachers to work with small groups of students who have similar reading behaviors, or who read on the same "level." Teachers often use books that are on the students' instructional reading level, referred to commonly as 'leveled readers', so that students can read with minimal challenge and can practice skills/strategies that the teacher introduces. The practice of using leveled texts has been debunked since the 1960's. Studies show that leveled texts can stunt the reading growth of students since the texts limit the opportunities students have to grow their reading skills. In fact, students grow more in their reading when they have opportunities to read (with support) texts that are at their "frustration" level – that is, texts that are two-four grade levels above their instructional level. Students do need teacher guidance and support, but that support is best leveraged when students read texts that are rich and offer a lot of opportunities to build their knowledge of the world.

A whole language-based or "balanced" approach intensifies the inequities faced by many of our students who do not come from language-rich homes or who have not had abundant life experiences outside of school. Whole language assumes students come to school with well-established knowledge and vocabulary and the decoding skills to access texts, and it fails to directly teach those skills if a child has learning gaps. Whole language ignores what science has shown:

- Reading is not natural, and nearly every student must be taught to read through a structured and extended process.
- Children do not learn to read and write through exposure to print.
- Teaching children to read requires teaching phonemic awareness, phonics, fluent word reading, and comprehension.



For more explicit examples of how classrooms may differ by these two approaches, consider this interactive tool: [Phonics vs. Balanced Literacy: A Classroom Comparison.](https://www.edweek.org/ew/section/multimedia/phonics-vs-balanced-literacy-a-classroom-comparison.html)

<https://www.edweek.org/ew/section/multimedia/phonics-vs-balanced-literacy-a-classroom-comparison.html>



**IF YOUR DISTRICT  
ISN'T HAVING AN  
'UH OH' MOMENT  
AROUND READING  
INSTRUCTION, IT  
PROBABLY  
SHOULD BE."**

**JARED MYRACLE,  
BRIAN KINGSLEY, &  
ROBIN MCCLELLAN**

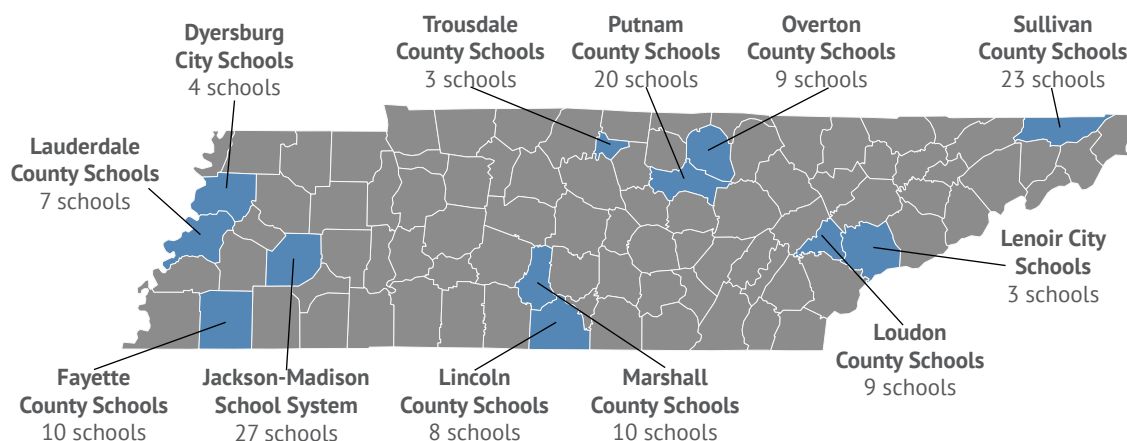
### **Ask yourself these leadership questions.**

- What is the picture of literacy achievement in your district, school, classroom, or community? Which students are learning to read proficiently by third grade? What instructional decisions are leading to their success?
- How does the science of reading research play out in your district literacy strategy? Professional learning opportunities for teachers and leaders? Classroom practice? Materials selection?
- What does your instructional leadership team understand about the science of reading?
- What opportunities exist for teachers and leaders to participate in professional learning on the science of reading?
- Are terms like whole language, balanced literacy, guided reading, or readers' and writers' workshop used to describe literacy instruction in your schools?
- Are there whole language-based practices happening in your schools? What are they? What is the rationale for keeping them?
- How are instructional materials for literacy selected in your district? Are your district's literacy materials rooted in the science of reading? If you approach the selection of ELA instructional materials with a focus on the science of reading, what strategies, approaches, and practices will need to change?

## Commit to learning more about the science of reading and determine how you will bring the science of reading to the students in your district.

### Learn with Local Colleagues

Connect with districts who have been implementing high-quality instructional materials based in the science of reading. Below are some districts we know are already engaging in this work:



Utilize the [Instructional Materials Implementation Guidebook](#) from LIFT Education.

### Podcasts

[Hard Words: Why aren't our kids being taught to read?](#) A primer on the science of reading.

[At a Loss for Words: How a flawed idea is teaching millions of kids to be poor readers](#) A look inside a key tenet of the whole language school of thought.

[Science of Reading: The Podcast](#) Insights on reading from researchers and practitioners.

### Blogs and Online Resources

[Curriculum Matters](#) A professional learning network of district leaders, including many leaders from Tennessee.

[Knowledge Matters](#) collection of resources from educational leaders and science of reading experts.

[Get Reading Right](#) A series of interactive resources examining the science of how reading should be taught.

### Books

[The Knowledge Gap: The hidden cause of America's broken education system—and how to fix it](#) by Natalie Wexler

[Know Better, Do Better: Teaching The Foundations So Every Child Can Read](#) by David Liben and Meredith Liben



# About SCORE

The State Collaborative on Reforming Education (SCORE) is a nonpartisan nonprofit education policy and advocacy organization based in Nashville, Tennessee. SCORE was founded in 2009 by Senator Bill Frist, MD, former US Senate majority leader, and works to transform education in Tennessee so all students can achieve success in college, career, and life.

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